BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Ashburnham

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

Produced in 2004

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

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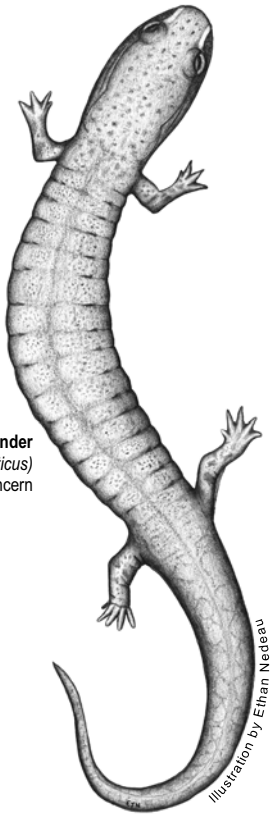
* Depending on the location of Core Habitats, your city or town may not have all of these sections.



Spring Salamander
(Gyrinophilus porphyriticus)
Species of Special Concern

Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.

Natural Heritage & Endangered Species Program

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For more information on rare species and natural communities, please see our fact sheets online at ***www.nhesp.org***

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

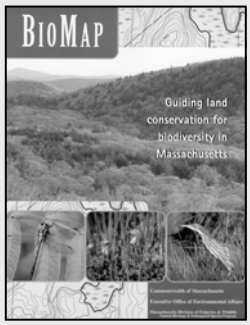
Introduction

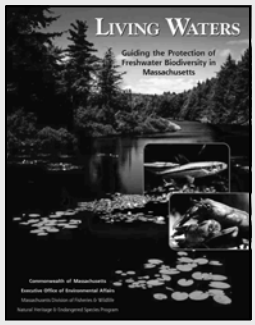
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, ***BioMap*** and ***Living Waters***. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate ***Core Habitats*** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the ***BioMap*** and ***Living Waters*** reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the ***riparian areas***, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as ***Supporting Natural Landscape*** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, ***Critical Supporting Watersheds*** highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap

	Species and Verified Natural Community Types	
Biodiversity Group	**Included in BioMap**	**Total Statewide**
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types

Living Waters

	Species	
Biodiversity Group	**Included in Living Waters**	**Total Statewide**
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- ***Endangered*** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- ***Threatened*** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- ***Special Concern*** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial ***watch list*** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- ***Critically Imperiled*** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- ***Imperiled*** communities typically have 6-20 sites or few remaining acres in the state.
- ***Vulnerable*** communities typically have 21-100 sites or limited acreage across the state.
- ***Secure*** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The ***Massachusetts Natural Heritage Atlas*** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

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Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific ***fact sheets*** at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone *508-792-7270, Ext. 200*

by Fax: *508-792-7821*

by Email: *natural.heritage@state.ma.us*.

by Mail: *North Drive*
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - Natural Heritage Atlas, and more!

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BioMap: Species and Natural Communities

Ashburnham

Core Habitat BM111

Natural Communities

Common Name	Scientific Name	Status
Acidic Rocky Summit/Rock Outcrop Community		Secure
Spruce - Fir - Northern Hardwoods Forest		Secure

Invertebrates

Common Name	Scientific Name	Status
New England Bluet	*Enallagma laterale*	Special Concern
Ski-Tailed Emerald	*Somatochlora elongata*	Special Concern

Core Habitat BM137

Natural Communities

Common Name	Scientific Name	Status
Spruce - Fir - Northern Hardwoods Forest		Secure

Core Habitat BM139

Natural Communities

Common Name	Scientific Name	Status
Acidic Rocky Summit/Rock Outcrop Community		Secure
Spruce - Fir - Northern Hardwoods Forest		Secure

Core Habitat BM145

Natural Communities

Common Name	Scientific Name	Status
Acidic Rocky Summit/Rock Outcrop Community		Secure

BioMap: Species and Natural Communities

Ashburnham

Core Habitat BM169

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM188

Natural Communities

Common Name	Scientific Name	Status
Level Bog		Vulnerable

Core Habitat BM202

Natural Communities

Common Name	Scientific Name	Status
Spruce-Tamarack Bog		Imperiled

Core Habitat BM222

Natural Communities

Common Name	Scientific Name	Status
Acidic Shrub Fen		Vulnerable

Core Habitat BM238

Vertebrates

Common Name	Scientific Name	Status
Common Loon	*Gavia immer*	Special Concern

Core Habitat BM305

Plants

Common Name	Scientific Name	Status
Sand Violet	*Viola adunca*	Endangered

Vertebrates

Common Name	Scientific Name	Status
American Bittern	*Botaurus lentiginosus*	Endangered

Core Habitat BM358

Plants

Common Name	Scientific Name	Status
Dwarf Mistletoe	*Arceuthobium pusillum*	Special Concern
Slender Cottongrass	*Eriophorum gracile*	Threatened

Vertebrates

Common Name	Scientific Name	Status
Common Loon	*Gavia immer*	Special Concern

BioMap: Core Habitat Summaries

Ashburnham

Core Habitat BM111

This Core Habitat in Ashburnham contains wetlands and upland forests that together support a variety of rare dragonflies and damselflies. The area also contains high-quality natural communities, including several good examples of open Acidic Rocky Summits.

Natural Communities

A series of Acidic Rocky Summit/Rock Outcrops is found along the ridge of Mount Watatic. Acidic Rock Outcrops are open communities of shrubs, scattered grasses, mosses, lichens and occasional trees found on exposed rocks. These areas are dry with little soil, and can often be found as patches within other ridgetop communities. Although the popular outcrops here experience much human use, they continue to support good plant diversity and remain free of exotic species. This Core Habitat is also part of a complex that contains the state's easternmost occurrence of a large Spruce-Fir-Northern Hardwoods Forest. Spruce-Fir-Northern Hardwoods Forests are a northern, high elevation variant of Red Spruce-Northern Hardwood forests. This community type tends to be in cool, rocky soils that are nutrient poor, somewhat dry, and acidic. Outside of the Appalachian Mountains, Massachusetts supports some of the more southern locations of this natural community type.

Invertebrates

This Core Habitat is minimally fragmented and includes a diversity of wetlands (streams, ponds, bogs, and fens) that are surrounded by upland forest. The wetlands and the forest are important habitat for the New England Bluet damselfly, the Ski-tailed Emerald dragonfly, and a number of other dragonfly species. Although partially overlapping with the Ashburnham State Forest to the east, most of this Core Habitat appears to be unprotected.

Core Habitat BM137

Natural Communities

This Core Habitat is part of a series of Core Habitats that contains the state's easternmost occurrence of a large Spruce-Fir-Northern Hardwoods Forest. Spruce-Fir-Northern Hardwoods Forests are a northern, high elevation variant of Red Spruce-Northern Hardwood forests. This community type tends to be in cool, rocky soils that are nutrient poor, somewhat dry, and acidic. Outside of the Appalachian Mountains, Massachusetts supports some of the more southern locations of this natural community type.

BioMap: Core Habitat Summaries

Ashburnham

Core Habitat BM139

Natural Communities

This Core Habitat is part of a series of Core Habitats that contains the state's easternmost occurrence of a large Spruce-Fir-Northern Hardwoods Forest. Spruce-Fir-Northern Hardwoods Forests are a northern, high elevation variant of Red Spruce-Northern Hardwood forests. This community type tends to be in cool, rocky soils that are nutrient poor, somewhat dry, and acidic. Outside of the Appalachian Mountains, Massachusetts supports some of the more southern locations of this natural community type. This Core also contains a series of Acidic Rock Outcrops found along the ridge of Mount Watatic. Acidic Rock Outcrops are open communities of shrubs, scattered grasses, mosses, lichens and occasional trees found on exposed rocks. These areas are dry with little soil, and can often be found as patches within other ridgetop communities. Although the popular outcrops here experience much human use, they continue to support good plant diversity and remain free of exotic species.

Core Habitat BM145

Natural Communities

This Core Habitat is part of a series of Acidic Rock Outcrops is found along the ridge of Mount Watatic. Acidic Rock Outcrops are open communities of shrubs, scattered grasses, mosses, lichens and occasional trees found on exposed rocks. These areas are dry with little soil, and can often be found as patches within other ridgetop communities. Although the popular outcrops here experience much human use, they continue to support good plant diversity and remain free of exotic species.

Core Habitat BM188

Natural Communities

This Core Habitat contains a good-quality Level Bog with a small open Sphagnum mat, well-buffered by a forested swamp and upland woods. Level Bogs are dwarf shrub peatlands, generally with pronounced hummock and hollow formations. These wetland peatlands are our most acidic and nutrient-poor, because they receive little overland water input, and are not connected to the water table.

Core Habitat BM202

Natural Communities

This Core Habitat contains a small Spruce-Tamarack Bog of moderate quality that is well-buffered by surrounding forest. Spruce-Tamarack Bog communities are acidic forested peatlands with an overstory of Black Spruce and Tamarack and an understory of Heath shrubs on Sphagnum moss. They occur in kettlehole depressions, watershed divides, and along pond margins.

BioMap: Core Habitat Summaries

Ashburnham

Core Habitat BM222

Natural Communities

This Core Habitat contains an Acidic Shrub Fen of good condition and minimal disturbances that is well-buffered by an upland forest and a forested bog. Acidic Shrub Fens are shrub-dominated acidic peatlands found primarily along pond margins in the eastern and central part of the state. These wetland communities experience some groundwater and/or surface water inputs, but no calcareous seepage.

Core Habitat BM238

Vertebrates

The shoreline and waters of Naukeg Lake in Ashburnham provide breeding habitat for Common Loons. Common Loons are threatened by lack of suitable natural sites and available nesting rafts, as well as water level fluctuations.

Core Habitat BM305

Plants

One area of this Core Habitat contains a population of the Endangered Sand Violet, which thrives in disturbed areas with exposed mineral soil.

Vertebrates

Emergent freshwater wetlands, meadows, and shrub swamps along the edges of Cheshire Pond in Ashburnham provide habitat for wetland birds, including American Bitterns.

Core Habitat BM358

Plants

Parts of this Core Habitat support populations of the uncommon Dwarf Mistletoe, a parasitic plant that forms a "witch's broom" on Black Spruce trees. Growing in a narrow bog is Slender Cottongrass, which looks like a stalk with a cotton-ball at its tip.

Vertebrates

The shoreline and waters of Lake Wampanoag in Ashburnham and Gardner provide breeding habitat for Common Loons. Common Loons are threatened by lack of suitable natural sites and available nesting rafts, as well as water level fluctuations.

Living Waters: Species and Habitats

Ashburnham

Core Habitat LW042

Exemplary Habitats

Common Name	Scientific Name	Status
Lake/Pond Habitat		----------

Core Habitat LW151

Exemplary Habitats

Common Name	Scientific Name	Status
Lake/Pond Habitat		----------

Core Habitat LW238

Invertebrates

Common Name	Scientific Name	Status
Eastern Pearlshell	*Margaritifera margaritifera*	----------

Core Habitat LW261

Plants

Common Name	Scientific Name	Status
Algae-like Pondweed	*Potamogeton confervoides*	Threatened

Living Waters: Core Habitat Summaries

Ashburnham

Core Habitat LW042

Lincoln Pond is an unusual, naturally acidic pond of moderate depth surrounded by an Acidic Shrub Fen plant community. The pond likely lacks fish, providing more opportunities for a diversity of aquatic invertebrates in the absence of fish predation. The Critical Supporting Watershed is mostly protected under conservation ownership.

Core Habitat LW151

Upper Naukeag Lake is a large, acidic lake. Of all the large lakes in Massachusetts, this lake is one of the few with little development in its riparian areas and surrounding watershed. As such, the lake has the potential to support a diversity of invertebrate habitats both nearshore and in its open waters.

Core Habitat LW238

Phillips Brook supports a robust population of the Eastern Pearlshell, a species of freshwater mussel known from only 22 water bodies in Massachusetts. This species inhabits streams and rivers that are cool and clean enough to support its trout fish hosts.

Core Habitat LW261

Lake Wampanoag, a naturally acidic lake, is home to a rare species of aquatic plant, the Algae-like Pondweed. This species is so named because of its filamentous and many-branched underwater leaves. Native freshwater plants like the Algae-like Pondweed are an important component of aquatic ecosystems, providing habitat and nutrition for fishes and invertebrates, and adding oxygen to the water through photosynthesis.

Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage &
Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: www.nhesp.org.